the ends of the sash-bars, drilling them, &c., is very interesting. A Bramah press tests the girders, steam gives motion every where, and the sash-bars are *dipped* into paint and passed under brushes to wipe off the superfluity.

The machines to enable the men to glaze the transept are somewhat different from those employed in other portions of the building, in order to enable the glaziers to travel up the circular roof. The mode adopted is that of placing a small windlass in each carriage, to which is attached one end of a rope, the other being made fast to the upper portion of the roof. The machine is provided with wheels which travel in the gutters of the circular ribs, and by turning the small windlass the workman is enabled to propel himself along as his work advances.

The Building is not yet finished: it will scarcely be so in less than a month at the present rate of progression, wonderfully rapid as that is. This, however, will be quite early enough.

On the last day of the old year, when, as it is understood, Messrs. Fox and Henderson's more complete control over the building expired, the members of the Society of Arts visited the works at their invitation, and Professor Cowper, of King's College, gave an explanation of the scientific construction of the edifice. The two principal points made by Mr. Cowper were, 1st, to exemplify the greatly increased strength which could be obtained from materials by giving them a scientific form (a very good point); and secondly, to prove what much cleverer fellows engineers were than architects,—a very weak one. He demonstrated the first very neatly and nicely; showed how two quills, 1 inch high, were not crushed by less than 2 cwt.; how that the same quantity of material in a solid iron column, when formed into a hollow one, would carry much greater weight, and that a piece of tin plate, of no strength in that form, would, when twisted into a cylinder, withstand a great pressure. He drew attention to the regularity with which the columns were placed. Had the relative distances not been accurately preserved, the girders, cast as they were at a distance, would not have fitted. The cast-iron columns being mounted on each other, tier above tier, it was necessary that the points of junction should be fitted to each other with mathematical precision. This necessity the professor illustrated by pieces of wood roughly cut in pillar-shape and placed above each other, which, of course, would not stand straight; the same experiment being repeated with pieces of wood pillar-shaped, and the ends turned in a lathe, of course with a very different result. Thus, he continued, it became requisite that the ends of the pillars should be turned. There were 2,500 columns and 12,000 "facings" to be done. Few engineers would have ventured on such an undertaking, but Messrs. Fox and Henderson had accomplished it, and the result was that there was not a crooked line in the building. He stated, as to the girders for galleries, that they are proved to 15 tons; that the breaking weight is 30 tons, and that they could not be subjected in their places to a greater weight than 7½ tons.

We cannot compliment the professor on the manner in which he replied to those unknown quantities,—"the critics:" according to our humble judgment, it was quite unworthy of his position and reputation. Take one instance. The lecturer produced a model, made of laths, representing the half of the transverse section of the building. Every column was represented by a single lath, and every girder by two laths, one for its upper, and the second for its lower ledge. All the connections, for the sake of experiment, were made by pivots or pins; and the effect of the wind in blowing down the building was shown by pushing the inner columns outwards, when they all turned over on the pivots, and folded up flat like a parallel ruler. "This," exclaimed the lecturer, "is how the critics build. Now I will show you how Fox and Henderson build." He then added a few diagonal pieces to the girder pivots to represent the cross pieces in the girders, and showed that with these additions the frame would not close up as before, but was susceptible of being raised up as a whole. One of the morning papers gravely describes this experiment as "triumphantly conclusive of the rigidity of the edifice!" We need not tell the readers of THE BUILDER that it no more applied to any of the remarks made by "the critics," than telling them the Emperor of Russia had taken the "Star and Garter" would have done. It served its purpose, and was not without use with an audience of amateurs; but "the critics" ought to have been left out of the question, especially when, putting a hundredweight on two small semicircular ribs, made out of a hoop, the lecturer exclaimed—"Now will they be afraid to go under the transept roof." Tenterden steeple, the world-famous illustration of a *non sequitur*, must hide its head henceforth. We regret being so often dragged into fault-finding, and made to appear antagonistic to an undertaking in which we are so largely interested, and for the promotion of which we have personally devoted much time, and will therefore say no more.*

Earnestly we wish the Grand Exhibition, what it will doubtless have, a successful and triumphant issue, and we will close our present remarks with the words of one who has, on other occasions, sung in our pages,—

"Right gladly, brother workmen, will each English artisan
Rejoice to make you welcome all, as honest man to man—
And teach, if aught he has to teach, and learn the much to learn,
And show to men in every land, how all the world may earn—

Whatever earth, man's heritage, of every sort can yield,
From mine and mountain, sea and air, from forest and from field,
Whatever reason, God's great gift, can add or take away,
To bring the worth of all the world beneath the human sway.

Whatever science hath found out, and industry hath earned,
And taste hath delicately touched, and high-bred art hath learned,
Whatever God's good handicraft, the world he made hath made;
By man, God's earnest artisan, the best shall be displayed.

Oh! think it not an idle show, for praise, or pride, or gold,
No man on earth who gains a good can hide it from himself;
By any thought that anything can any how improve,
We help along the cause of all, and give the world a move."

"RIPLEY WITH A RULE."

THOMAS RIPLEY has been immortalised by Pope, who has preserved his name, like a fly in amber, in no less than three passages of his "Moral Essays" and satirical works.

"What brought Sir Visto's ill-got wealth to waste?
Some demon whisper'd, 'Visto have a taste.'
Hear'n visits with a taste the wealthy fool,
And needs no rod but Ripley with a rule."—
Epistle IV. to Richard Boyle, Earl of Burlington, line 15.

"See under Ripley rise a new Whitehall,
While Jones and Boyle's united labours fall."—
Dunciad, book 3, line 327.

"Who builds a bridge that never drove a pile?
(Should Ripley venture all the world would smile.)"—*Imitations of Horace*, book 2, epis. 1.

These repeated notices, by so great a man as Alexander Pope (although far from laudatory), will at least justify the inquiry, who was Ripley, and what were his works?

Horace Walpole tells us, that Thomas Ripley was born in Yorkshire, and executed such considerable works that he must not be omitted, though he wanted taste and fell under the lash of lasting satire. Pope having twice mentioned him (in fact, thrice). The truth is (says Walpole), "politics and partiality concurred to help on these censures: Ripley was employed by the minister, and had not the countenance of Lord Burlington, the patron of Pope."

The parentage, place of birth, and education of Ripley are not known even to his descendants, who, however, preserve a tradition that early in life he walked from Yorkshire to London to seek his fortune: probably he had some connections in London to apply to. John Ripley had been chief joiner to King Henry VIII., which is a curious coincidence, if the subject of the present notice had no other connection with him than having filled a similar office under the sovereign of his own time.

The *London Gazette*, of May 8, 1726, contains the appointment of Thomas Ripley, Esq., Chief Carpenter of His Majesty's Works, to be Comptroller of His Majesty's Works, in the room of Sir John Vanburgh, deceased: he thus became the successor, also, to Geoffrey Chaucer, William of Wykeham, Inigo Jones, Sir Christopher Wren, and other great architects who had previously filled the same honourable and responsible position.

Before this appointment, however, he had acquired reputation in his art. He was much patronised by Sir Robert Walpole, for whom he built and greatly improved the plan of Houghton Hall (Norfolk), for which Colin Campbell had furnished the original design. This mansion was commenced in 1722, and not finished till 1735. "The whole building is of stone, and though not strictly conformable with the present taste, is nevertheless a superb and elegant structure: it extends 500 feet, including the wings, which contain the offices. The centre is 165 feet by 100, and consists of a rustic principal and attic stories. The west front is ornamented with a pediment, containing the armorial bearings of the family, supported by four Ionic three-quarter columns, and crowned with statues. The principal apartments are very magnificent, particularly the saloon, which is 40 feet long, 30 feet wide, and 40 feet high (rather too high), and the hall a cube of 40 feet, with a stone gallery round three of its sides. And these apartments were decorated with the sculpture of Rysbrack, and the best private collection of pictures in England," which were afterwards sold to the Empress of Russia.

The first public edifice which we know to have been built by Ripley was the Custom House. The former Custom House having been burned in 1715 (as its predecessor had been in the Fire of London, 1666), Ripley was employed to erect a new Custom House, which he did in 1718; and the building, although

is pressing in opposition to the crutch which stands above the table, the elasticity of the wood tends to press this end upwards against the saw, by which the operation is much facilitated. At this moment another man makes pressure on the lever first spoken of, which brings the saw down in rapid revolution upon the gutter, and cuts it completely through. The descent of the saw is continued a few inches further, when its motion is stopped by the lever coming in contact with a stud. Before this point is reached, the cutters first sheet the centre of the saw, and which, whilst revolving with it appear to form as it were a boss, have scooped out the end of the groove in a figure approximating to a hemisphere. Into this hemisphere a corresponding projection in the casting attached to the end of the gutter will drop, and this will form the tube by which the water will be conducted to the large gutters. The lever being released, the saw rises, the box at the other end is opened, the gutter released from its constrained position, and turned round on the crutch to present the uncut end to the action of the saw. That which has been cut is now confined in the shoe, and the operation above described performed at the other end. It is then released, and removed from the machine, and in this state is ready to undergo the next process, which is that of cambering.

* Mr. Cowper stated that the personal superintendence had devolved upon Mr. Fox. The general management of the works had been conducted by Mr. Cochrane. The laying out of the ground had been intrusted to Mr. Brownger, and Mr. Cowper, a son of the lecturer, had constructed the machinery. The contractors express their obligations to Messrs. Cochrane and Co., of Woodside Ironworks, near Dudley, and to Mr. Robert Jobson, of Hollyhall works, near the same place, for their exertion and attention in the preparation of casting.

To learn how to use OCR and PDF Compression visit our website